

What is claimed is:

1. A transmitting diversity system with a base station transmitting signals from a plurality of antennas and performing diversity transmission according to feedback data transmitted from a mobile node receiving the signals, comprising:

a signal condition detection unit detecting the condition of a signal transmitted from each of the plurality of antennas;

an antenna selection unit selecting an antenna for which a control weight is calculated, from the plurality of antennas; and

a control weight unit calculating a control weight applied to the selected antenna and applying the control weight to signals transmitted from the selected antenna.

2. The transmitting diversity system according to claim 1, wherein said control weight unit fixes the control weight of an unselected antenna.

3. The transmitting diversity system according to claim 1, further comprising

a switch unit routing input signals to each of the plurality of antennas and disconnecting the antenna,

wherein

said antenna selection unit turns off a corresponding switch so that no signals can be transmitted from an unselected antenna.

5

4. The transmitting diversity system according to claim 1, wherein said signal condition detection unit measures propagation loss, fading frequency or correlation coefficient between antennas of an incoming signal.

10

5. The transmitting diversity system according to claim 1, wherein said signal condition detection unit is provided for the mobile node.

15

6. The transmitting diversity system according to claim 1, wherein said signal condition detection unit is provided for the base station.

20

7. The transmitting diversity system according to claim 1, wherein

the plurality of antennas are provided for a plurality of base stations, and

said antenna selection unit also selects a base station to communicate with by selecting an antenna with a controlled weight from the plurality of antennas and

25

making possible a handover process accompanying the travel of each mobile node.

8. A transmitting diversity method with a base station
5 transmitting signals from a plurality of antennas and performing diversity transmission according to feedback data transmitted from a mobile node receiving the signals, comprising:

detecting the condition of a signal transmitted
10 from each of the plurality of antennas;

selecting an antenna for which a control weight is calculated, from the plurality of antennas; and

calculating a control weight applied to the selected antenna and applying the control weight to
15 signals transmitted from the selected antenna.

9. The transmitting diversity method according to claim 8, wherein in the control weight step, the control weight of an unselected antenna is fixed.

20

10. The transmitting diversity method according to claim 8, further comprising

routing input signals to each of the plurality of antennas and disconnecting the antenna (switch step),
25 wherein

in the antenna selection step, a corresponding switch is turned off so that no signals can be transmitted from an unselected antenna.

5 11. The transmitting diversity method according to claim 8, wherein in the signal condition detection step, propagation loss, fading frequency or correlation coefficient between antennas of an incoming signal is measured.

10

12. The transmitting diversity method according to claim 8, wherein the signal condition detection step is performed in the mobile node.

15 13. The transmitting diversity method according to claim 8, wherein the signal condition detection step is performed in the base station.

14. The transmitting diversity method according to claim
20 8, wherein

the plurality of antennas are provided for a plurality of base stations, and

in the antenna selection step, a base station to communicate with is also selected by selecting an antenna
25 with a controlled weight from the plurality of antennas

and making possible a handover process accompanying the travel of a mobile node.